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Stable Ischemic Heart Disease

EFFECTS OF BLACK RASPBERRY ON LIPID PROFILES, VASCULAR ENDOTHELIAL FUNCTION AND CIRCULATING ENDOTHELIAL PROGENITOR CELLS IN PATIENTS WITH METABOLIC SYNDROME

Oral Contributions

Room 147 A

Saturday, March 29, 2014, 8:00 a.m.-8:15 a.m.

Session Title: Stable Ischemic Heart Disease: Basic Sciences and Clinical Studies

Abstract Category: 25. Stable Ischemic Heart Disease: Clinical

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Background: Black raspberry (*Rubus occidentalis*) has been known for its anti-inflammatory and anti-oxidant effects. However, short-term effects of black raspberry on lipid profiles and vascular endothelial function have not been investigated in patients with metabolic syndrome.

Methods: Patients with metabolic syndrome (n=77) were prospectively randomized into the black raspberry group (n=39) and placebo group (n=38) during the 12-week follow-up. Dried unripe black raspberries were made into capsules containing black raspberry powder, and black raspberry powder (750mg/day) or placebo was administered for 12 weeks. Lipid profiles, brachial artery flow-mediated dilatation (baFMD) and inflammatory cytokines such as IL-6, TNF-alpha, C-reactive protein, adiponectin, ICAM-1, VCAM-1 were measured at baseline and at 12-week follow-up.

Results: Baseline patient characteristics such as mean ages and body mass index were similar between the 2 groups. Decreases from baseline in total cholesterol levels (-22.8 ± 30.4 mg/dL vs. -1.9 ± 31.8 mg/dL, $p < 0.05$, respectively) and total cholesterol/HDL ratio (-0.31 ± 0.64 vs. 0.07 ± 0.58 , $p < 0.05$, respectively) were significantly greater in the black raspberry group when compared to the placebo group. Decreases from baseline in IL-6 (-0.4 ± 1.5 pg/mL vs. -0.1 ± 1.0 pg/mL, $p < 0.05$, respectively) and TNF-alpha levels (-2.9 ± 4.7 pg/mL vs. 0.1 ± 3.6 pg/mL, $p < 0.05$, respectively) were significantly greater in the black raspberry group when compared to the placebo group. Increases in baFMD at 12-week follow-up were significantly greater in the black raspberry group when compared to the placebo group (3.3 ± 4.4 mm vs. 1.0 ± 3.5 mm, $p < 0.05$, respectively).

Conclusions: The use of black raspberry significantly decreased serum total cholesterol levels and inflammatory cytokines, thereby improving vascular endothelial function in patients with metabolic syndrome during the 12-week follow-up.